



# VIDEO CASSETTE RECORDER



31B-250 31B-254 (PDC)  
31B-450 31B-454 (PDC)

## Owner's Manual

### Table of Contents

Safety Information .....	2
Before Using This Product .....	3
Installation .....	5
Basic Operation .....	9
Advanced Operations .....	10
Maintenance .....	14
Troubleshooting Guide .....	15
Specifications .....	15
Declaration of Conformity .....	16

### Features

- Automatic Operations
- On Screen Display
- Auto Repeat Playback
- Picture Select
- One Touch Recording
- Parental Lock
- Auto Return
- Timer Recording
- Auto Head Cleaner
- NTSC Playback
- Auto Clock Setting (31B-254/31B-454)
- PDC (31B-254/31B-454)
- Quick-Find (31B-450/31B-454)
- Index/Time Search (31B-450/31B-454)

### Supplied Accessories

- Remote control
- Two R6 batteries
- RF cable
- Quick setup guide

### Important Copyright Information

Unauthorised recording or use of broadcast television programming, video tape, film or other copyrighted material may violate applicable copyright laws. We do not take responsibility for the unauthorised duplication, use, or other acts which infringe upon the rights of copyright owners.

### A Note About Recycling

This product's packaging materials are recyclable and can be reused. Please dispose of any materials in accordance with your local recycling regulations.

This product consists of materials which can be recycled and reused if disassembled by a specialised company.

Batteries should never be thrown away or incinerated but disposed of in accordance with your local regulations concerning chemical wastes.



### Model/Serial Number

This appliance has a serial number located on the rear panel. Please note down the model number and serial number and retain the information for your records.

Model number: \_\_\_\_\_

Serial number: \_\_\_\_\_

## Safety Information

### WARNING:

- **Live parts inside. Do not remove any screws.**
- **To avoid fire or electric shock, do not expose this unit to rain or moisture.**
- **Dangerous voltage inside**

### Precautions

- Use only cassettes with the VHS mark with this VCR.
- Do not attempt to open the cabinet. There are no parts you can service inside. Refer all servicing to qualified service personnel.
- Slots and openings in the cabinet and the sides or bottom are provided for ventilation. To ensure reliable operation and to protect the unit from overheating, these openings must not be blocked or covered.
- Avoid installation in enclosed spaces such as bookcases unless proper ventilation is provided.
- Keep the unit away from radiators and other heat sources.
- Avoid use near strong magnetic fields.
- Do not push objects of any kind into the VCR through the cabinet slots or openings as they could touch electrically live parts or short circuit parts resulting in a fire or electric shock.
- Never spill liquid on this unit. If liquid is spilled and penetrates into the unit, consult qualified service personnel.
- Use this unit in a horizontal (flat) position only.
- Before attempting to operate the unit, make sure that the Timer Recording mode is "OFF".
- This product is in Stand-by mode when it turns off while the power cord is connected.
- Disconnect the mains plug to shut off when find troubles or not in use.
- The mains plug shall remain readily operable.
- Read both manual instructions to ensure correct and safe installation and interconnection of the unit in multimedia systems.
- Keep the distances 20 cm around apparatus of ventilation openings.
- Do not place any combustible objects on the device (candles, etc.).

### Power Supply

The main power supply is engaged when the power cord plug is plugged in a 220-240V, 50Hz, AC outlet. To operate the unit, press **FUNCTION** to turn on the unit. (FUNCTION indicator on the VCR comes on.)

### Dew Warning

Moisture condensation may occur inside the unit when it is moved from a cold place to a warm place, after heating up a cold room, or under conditions of high humidity. Do not use the VCR for at least 2 hours until it is dry inside.

### Positioning

Do not place the VCR directly on top of, or underneath, your TV set. Ensure that there is at least 20 cm between the VCR and the TV set, and that air can circulate freely through the ventilation openings of the VCR.

### Connection to Power

Before Switching on make sure that the voltage of your electricity supply is the same as that indicated on the rating plate.

#### Mains Cord

This appliance may be fitted with a non-rewireable plug. If it is necessary to change the fuse in a non-rewireable plug the fuse cover must be refitted. If the fuse cover is lost or damaged, the plug must not be used until a replacement available from the appliance manufacturer is obtained.

It is important that the colour of the replacement fuse cover corresponds with the rating marking on the base of the plug. If the plug has to be changed because it is not suitable for your socket, or becomes damaged, it should be cut off and an appropriate plug fitted following the wiring instructions below. The plug removed must be disposed of safely as insertion into a 13A socket is likely to cause an electrical hazard. For your own safety read the following instructions carefully before attempting to connect this unit to mains. The wires in this mains lead are coloured in accordance with the following code:

BLUE=NEUTRAL, BROWN=LIVE

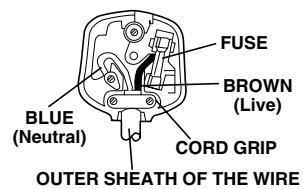
#### Important

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:-

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red. No connection is to be made to the earth terminal of the plug. If a 13 Amp (BS 1363) Plug is used, a 3 Amp Fuse must be fitted, or if any other type of Plug is used a 3 or 5 Amp Fuse must be fitted, either in the Plug or Adaptor, or on the Distribution Board.

Mains Supply: 220 - 240 V ~ 50 Hz - AC only

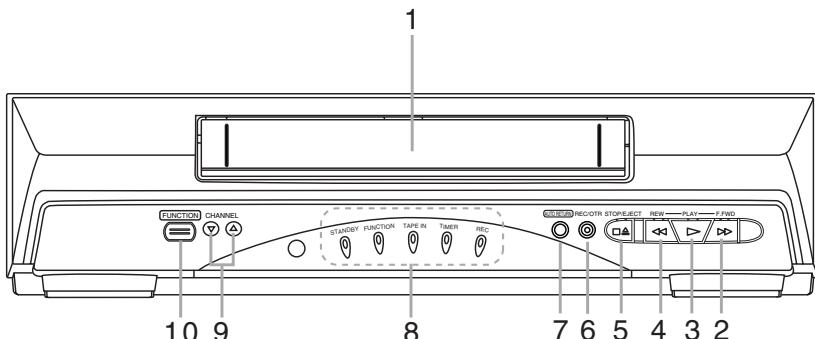
Do not make any connection to the larger pin marked with the letter "E" or by the symbol  or coloured green or green and yellow.



## Before Using This Product

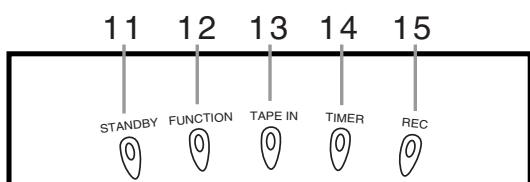
### Description of Controls

#### Front Panel



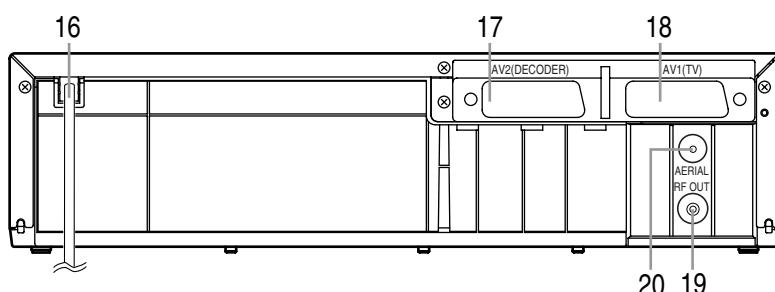
- 1. Cassette compartment
- 2. F.FWD (Fast Forward) button
- 3. PLAY button
- 4. REW (Rewind) button
- 5. STOP/EJECT button
- 6. REC/OTR button
- 7. AUTO RETURN button
- 8. Indicator (See below.)
- 9. CHANNEL (▲▼) buttons
- 10. FUNCTION button

#### Indicator



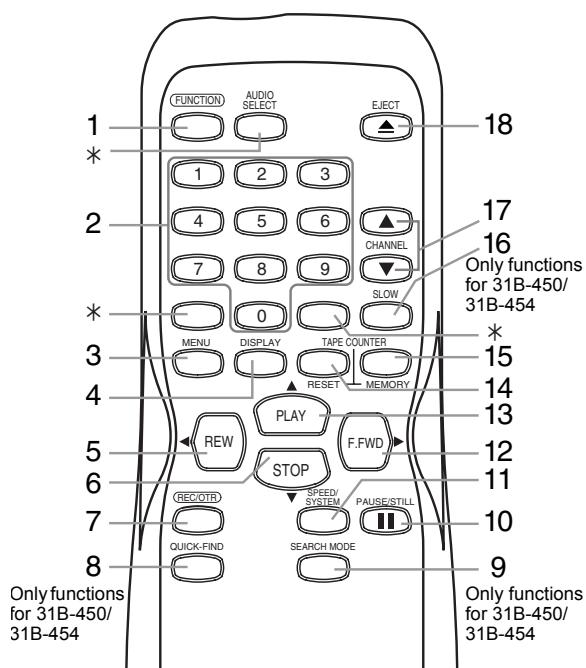
- 11. STANDBY indicator
- 12. FUNCTION indicator
- 13. TAPE IN indicator
- 14. TIMER indicator
- 15. REC indicator

#### Rear Panel



- 16. Power cord
- 17. AV2 (DECODER) socket
- 18. AV1 (TV) socket
- 19. RF OUT socket
- 20. AERIAL socket

## Remote Control

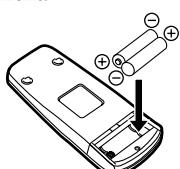


\* These buttons do not function for this VCR.

1. FUNCTION button
2. number buttons
3. MENU button
4. DISPLAY button
5. REW/◀ button
6. STOP/▼ button
7. REC/OTR button
8. QUICK-FIND button  
(Only functions for 31B-450/31B-454)
9. SEARCH MODE button  
(Only functions for 31B-450/31B-454)
10. PAUSE/STILL II button
11. SPEED/SYSTEM button  
(Only the function of SPEED is available for this VCR.)
12. F.FWD/▶ button
13. PLAY/▲ button
14. TAPE COUNTER RESET button
15. TAPE COUNTER MEMORY button
16. SLOW button  
(Only functions for 31B-450/31B-454)
17. CHANNEL (▲▼) buttons
18. EJECT ▲ button

### To insert the batteries:

Install two R6 batteries matching the polarity indicated inside the battery compartment.



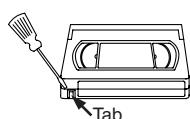
### Caution

Do not mix old and new batteries. (Also never mix alkaline batteries with manganese batteries.)

### Video Cassette Tape

This VCR will operate with any cassette that bears the VHS mark. For best results, we recommend the use of high-quality tapes. Do not use poor quality or damaged tapes.

You can prevent accidental erasing of a recording by breaking off the erase-prevention tab on the back edge of the cassette. If you decide to record on the tape again, cover the hole with plastic tape.



### Two Different Tape Speeds

Before recording, select the tape speed : SP mode (Standard Play) or LP mode (Long Play). The table below shows the maximum recording/playback time using E-60, E-120, E-180 or E-240 tapes in each mode.

Tape Type	Recording/Playback Time	
Tape Speed	SP Mode	LP Mode
E-60	1 hour	2 hours
E-120	2 hours	4 hours
E-180	3 hours	6 hours
E-240	4 hours	8 hours

### TV Colour System

Different countries use different television colour systems. Tapes recorded in the PAL or NTSC system can be played back on this unit. Usually, the picture on the TV screen will be in black and white when you play back a tape that is recorded in a different colour system.

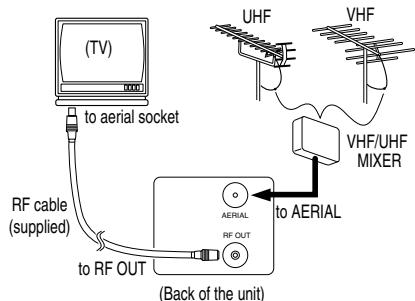
Tapes recorded in the NTSC system can be played back on this unit and a PAL system TV set. This feature is only available in the SP mode. When playing back such tapes, the picture may roll up or down, shrink vertically and black bars may appear both at the top and bottom of the screen. Adjust the vertical hold control on your TV, if the TV features this control.

## Installation

### Connecting the VCR

#### Basic Connection

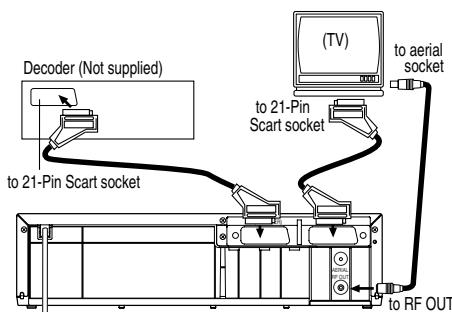
- 1) Disconnect the TV's power cord from the AC outlet.
- 2) Disconnect the VHF/UHF TV aerial coaxial cable from the TV.
- 3) Connect the VHF/UHF TV aerial coaxial cable to the VCR.
- 4) Connect the VCR to the TV using the RF cable.
- 5) Plug the power cords of the VCR and TV into the AC outlets.



#### Other Connections

##### Euro Scart (AV) Sockets

Your VCR is provided with two Scart sockets which you may connect to other external devices with Scart sockets. We recommend this connection to ensure a better audio and picture quality.



Euro Scart cables are obtainable at your dealer.

#### AV1 (TV) Connection to TV

If your TV has Scart sockets, you may connect your VCR's AV1 (TV) scart socket to the Scart socket on the back of your TV. Please see the instruction manual for your TV.

#### AV2 (DECODER) Connection for Other External Devices

The second Scart socket AV2 (DECODER) is designated for other external devices, e.g. decoder, another VCR, video camera and so on.

**Note:** If you want to connect a TV with Scart socket to your VCR, the TV must be connected to the VCR through AV1 (TV). A connection to AV2 (DECODER) will not function correctly.

#### External Input Mode

To receive the signal from an external source (decoder, video camera, another VCR, etc.), connect the source to the AV2 (DECODER) socket, and press **CHANNEL (▲/▼)** or enter "002" with the **number buttons**. "AV2" appears on the TV screen. If you use the AV1 (TV) socket, press **CHANNEL (▲/▼)** or enter "001" with the **number buttons**. "AV1" appears on the TV screen.

## Initial Settings

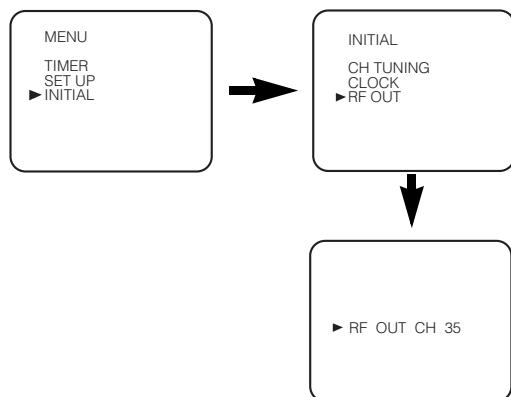
### Video Channel Setting

Video channel setting will be necessary, if your VCR is connected to the TV via the RF cable.

- Use the remote control for this procedure.

- 1) Insert a pre-recorded tape into the VCR.  
The VCR will turn on and start playback automatically. If playback does not start, press **PLAY/▲**.
- 2) Select and adjust your TV to channel 35.
  - If the playback picture appears on the TV screen, continue with step 8).
  - If channel 35 is set for broadcasting, or interference lines appear on the picture, the RF converter must be set to a different channel between CH22 and CH69. Continue with step 3).
- 3) Press **MENU**.
- 4) Press **PLAY/▲** or **STOP/▼** repeatedly to select to “INITIAL”. Then, press **F.FWD/►**.
- 5) Press **PLAY/▲** or **STOP/▼** repeatedly to select to “RF OUT”. Then, press **F.FWD/►**. The RF OUT CH menu will appear.
- 6) Press **PLAY/▲** or **STOP/▼** to select a channel which is not used for broadcast between channel 22 and channel 69 in your area, then press **F.FWD/►**.
- 7) Press **MENU** to exit.  
Set the TV channel to the RF OUT CHANNEL which was selected on the VCR. A picture from the VCR will appear on the TV screen. If a picture does not appear, repeat steps 3) to 7) using a different channel which is not used for broadcast.
- 8) Press **STOP/▼** to stop the tape.

**Note:** You may also access the RF OUT CH menu by pressing and holding **MENU** on the remote control for 3 seconds during power off until the RF OUT CH menu appears.



### Setting the Clock

This VCR incorporates a 24-hour clock. The clock must be set for the Timer Recording function to operate correctly.

- Use the remote control for this procedure.

- 1) Press **MENU**.
- 2) Press **PLAY/▲** or **STOP/▼** to select “INITIAL”, then press **F.FWD/►**.
- 3) Press **PLAY/▲** or **STOP/▼** to select “CLOCK”, then press **F.FWD/►**.

- 4) (31B-254 and 31B-454 only)

Press **PLAY/▲** or **STOP/▼** to select “MANUAL” or “AUTO”, then press **F.FWD/►**.

- If you select “MANUAL”, continue with step 5).
- If you select “AUTO”, Auto Clock Setting becomes “ON”. Press **FUNCTION**. The clock will appear on the TV screen when you turn on the VCR again.

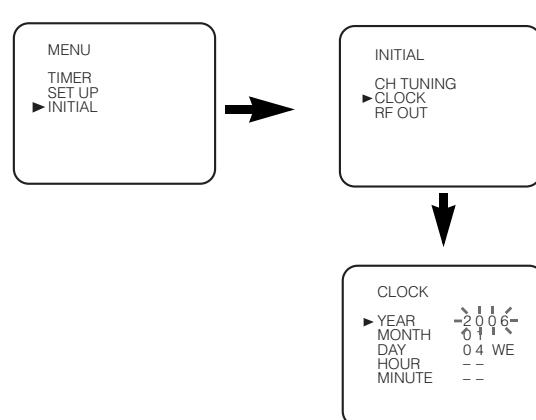
- 5) Press **PLAY/▲** or **STOP/▼** until the relevant year appears, then press **F.FWD/►**.
- 6) Press **PLAY/▲** or **STOP/▼** until the relevant month appears, then press **F.FWD/►**.
- 7) Press **PLAY/▲** or **STOP/▼** until the relevant day appears, then press **F.FWD/►**.
- 8) Press **PLAY/▲** or **STOP/▼** until the relevant hour appears, then press **F.FWD/►**.
- 9) Press **PLAY/▲** or **STOP/▼** until the relevant minute appears.
- 10) Press **MENU** to start the clock.

#### Note:

- Press **REW/◀** to go one step back from the current step during steps 5) to 9).
- Although seconds are not displayed, they begin counting from 00 when you exit by pressing **MENU**. Use this feature to synchronize the clock with the correct time.
- If the VCR is unplugged or if there is a power failure for more than 30 seconds, you may have to reset the clock.

[AUTO CLOCK] (31B-254 and 31B-454 only)

- Channel Presetting must be set before the Auto Clock is set.
- To set the clock automatically, the channel assigned to position 01 must have the PDC signal.
- The clock cannot be set automatically if you are not receiving a channel that carries a time signal in your area. In this case, set the clock manually.
- Once the auto clock setting is performed, the VCR will correct the current time by receiving PDC broadcasts whenever you turn off the VCR.
- The VCR will correct the current time automatically at 8:00, if the VCR power is turned off.
- Between 23:00~1:00, the AUTO CLOCK function does not work even if the VCR power is turned off.



## Channel Presetting

Tuning of broadcast channels not already preset in the VCR can be performed in two ways.

### Automatic Channel Preset

- By "AUTOMATICALLY" tuning channels and placing them in sequential order in the VCR's memory i.e. the first channel found will be memorized into the VCR's channel position 1, the second channel found will be memorized into the VCR's channel position 2 and so on.
- Execution of the "Automatic" channel presetting cancels all the preset channels. DO NOT use this feature if you intend to use some of the pre-tuned channels. Use the "Manual" channel presetting function to tune in the additional channels you require.

### Manual Channel Preset

- Each channel is tuned manually and individually. Follow the steps laid out in the "Manual Channel Preset" section.

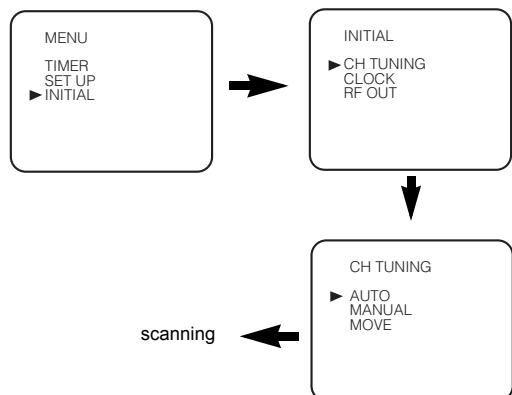
#### Before you preset Channel...

- It is necessary to set the video channel if your VCR is connected to the TV via the RF cable, and TV channel 35 is set for broadcasting, or interference lines appear on the picture. Please refer to "Video Channel Setting".

### Automatic Channel Preset

You can programme the tuner to scan only the channels that you can receive in your area.

- Use the remote control for this procedure.
- 1) Turn on the TV and select the TV channel to the video channel on the TV.
- 2) Press **MENU**.
- 3) Press **PLAY/▲** or **STOP/▼** to select "INITIAL", then press **F.FWD/►**.
- 4) Press **PLAY/▲** or **STOP/▼** to select "CH TUNING", then press **F.FWD/►**.
- 5) Press **PLAY/▲** or **STOP/▼** to select "AUTO", then press **F.FWD/►**.
- The tuner scans and memorizes all the active channels in your area. After scanning, the tuner stops on the lowest memorized channel.



#### To Select a Desired Channel

You can select a desired channel by using **CHANNEL (▲/▼)**, or directly pressing the **number buttons** on the remote control.

- Enter a channel number as a two-digit number for the quickest results. For example, to select channel 6, press **0** and **6**. If you only press **6**, channel 6 will be selected after a brief delay.
- You can only select channels 1-99.

### Manual Channel Preset

- Use the remote control for this procedure.

- Press **MENU**.
- Press **PLAY/▲** or **STOP/▼** to select "INITIAL", then press **F.FWD/►**.
- Press **PLAY/▲** or **STOP/▼** to select "CH TUNING", then press **F.FWD/►**.
- Press **PLAY/▲** or **STOP/▼** to select "MANUAL", then press **F.FWD/►**.
- Press **PLAY/▲** or **STOP/▼** to select "POSITION", then press **F.FWD/►**.
  - When a weak signal is received in Manual Tuning mode, you can change the background to solid blue or the static screen by pressing **TAPE COUNTER RESET**.
- Press the **number buttons**, **PLAY/▲**, or **STOP/▼** to select your desired position number, then press **F.FWD/►**.
  - You can select position number 01-99.
  - If [ON] appears on the right side of "SKIP", press **PLAY/▲** or **STOP/▼** to point to "SKIP". Then, press **F.FWD/►** to select [OFF].
  - If you want to remove scrambled signals, press **PLAY/▲** or **STOP/▼** repeatedly to point to "DECODER". Then, press **F.FWD/►** to select [ON].
- Press **PLAY/▲** or **STOP/▼** to select "CHANNEL", then press **F.FWD/►**.
 

Press **PLAY/▲** or **STOP/▼**. The VCR tuner will begin to search up or down automatically. When a channel is found, the VCR will stop searching and the picture will appear on the TV Screen.

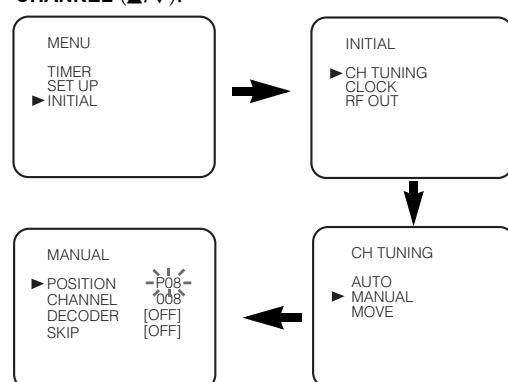
  - You can select desired channel number by using the **number buttons**. You must refer to the following Channel Plan table and press three digits to select the channel number.
  - (To select channel 24, press "0" button first and then press "2" and "4".)
  - If this is the channel you want, press **F.FWD/►**.

Channel Plan	
CH Indication	TV Channel
01 - 10	IRA - IRJ, GAP
21 - 69	E21 - E69
74 - 78	X, Y, Z, Z+1, Z+2
80 - 99, 100	S1 - S20, GAP
121 - 141	S21 - S41

This VCR can receive Hyper and Oscar frequency bands.

- Press **MENU** to exit.

**Note:** To confirm that a channel has been added, press **CHANNEL (▲/▼)**.



### To Skip a Preset Channel

The channels you can no longer receive or seldom watch can be set to be skipped when you access channels by pressing **CHANNEL (▲/▼)**.

- Use the remote control for this procedure.

- 1) Press **MENU**.
- 2) Press **PLAY/▲** or **STOP/▼** to select “INITIAL”, then press **F.FWD/►**.
- 3) Press **PLAY/▲** or **STOP/▼** to select “CH TUNING”, then press **F.FWD/►**.
- 4) Press **PLAY/▲** or **STOP/▼** to select “MANUAL”, then press **F.FWD/►**.
- 5) Press **PLAY/▲** or **STOP/▼** to select “POSITION”, then press **F.FWD/►**.
- 6) Press the **number buttons**, **PLAY/▲**, or **STOP/▼** to select relevant position number, then press **F.FWD/►**.
- 7) Press **PLAY/▲** or **STOP/▼** to select “SKIP”, then press **F.FWD/►** to select [ON].

- To memorize the channel again, press **F.FWD/►**. “ON” will change to “OFF”.

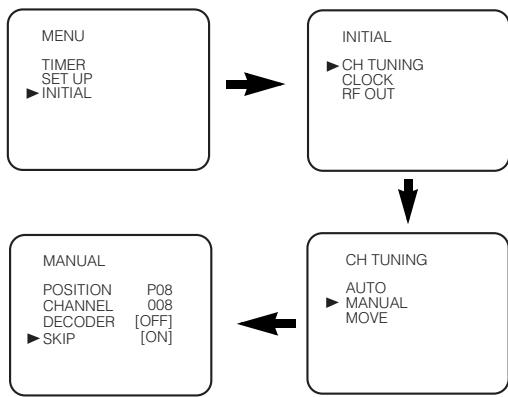
#### Note for 31B-254 and 31B-454 only

- The VCR refers to the PDC channel which was memorized into position 01 when you set the Auto Clock.

The position 01 must therefore be set “SKIP” to [OFF].

- 8) Press **MENU** to exit.

**Note:** To confirm that a channel has been deleted, press **CHANNEL (▲/▼)**.

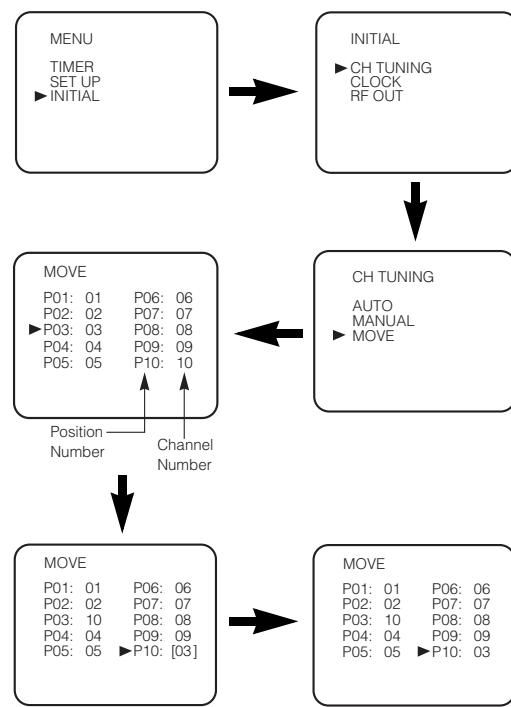


### Channel Reprogramming

You can replace two channels.

- Use the remote control for this procedure.

- 1) Press **MENU**.
- 2) Press **PLAY/▲** or **STOP/▼** to select “INITIAL”, then press **F.FWD/►**.
- 3) Press **PLAY/▲** or **STOP/▼** to select “CH TUNING”, then press **F.FWD/►**.
- 4) Press **PLAY/▲** or **STOP/▼** repeatedly to select “MOVE”, then press **F.FWD/►**.
- 5) Press **PLAY/▲** or **STOP/▼** repeatedly to select the position number you want to change the channel, then press **F.FWD/►**.
  - You cannot select a position number where “---” appears next to the number. This is because SKIP is set to [ON] for this position number.
- 6) When a weak signal is received in Channel Reprogramming mode, you can change the background to solid blue by pressing **TAPE COUNTER RESET**. If you press the button again, the background will return to the static screen.
- 7) Press **PLAY/▲** or **STOP/▼** repeatedly until the channel move to another position number, then press **F.FWD/►**.
- 7) Press **MENU**.



## Basic Operation

### Playback

#### Tracking Adjustment

- Tracking adjustment will be activated automatically (Digital Tracking function) when you start playback.
- When playing pre-recorded tapes or tapes recorded on units other than your own, noise lines (black and white streaks) may appear on the playback picture. If this occurs, you can adjust the tracking control manually by pressing **CHANNEL (▲/▼)** until the streaks disappear. To return to the DTR function, stop the tape once and the start playback again.

#### Note for 31B-450 and 31B-454 only:

- You can reduce the noise lines by pressing **CHANNEL (▲/▼)** in Slow mode, too. Slow tracking adjustment is not set automatically.
- In the Still mode, press **SLOW**, and press **CHANNEL (▲/▼)** until the streaks disappear. To return to the Still mode, press **PAUSE/STILL II** again.

- 1) Turn on the TV and select the video channel on the TV.
- 2) Insert a prerecorded tape.  
The VCR will turn on automatically. If the erase-protection tab has been removed, the VCR will start playback automatically.
- 3) Press **PLAY/▲** to begin playback.
  - Tracking adjustment will be activated automatically (Digital Tracking function) when you start playback. To adjust the tracking manually, press **CHANNEL (▲/▼)**.
  - <If a tape is already in the VCR...>
  - Using the buttons on the VCR  
Just press **PLAY** on the VCR. Power will automatically turn on and playback will start. (Direct Button Operation)
  - Using the buttons on the remote control  
Press **FUNCTION** to turn on, and then press **PLAY/▲**.
- 4) Press **STOP/▼** to stop playback.

#### Speed Search

- 1) Press **F.FWD/►** or **REW/◀** during playback to view a videotape at a high speed in either a forward or reverse direction. In this mode, the sound will be muted.
- 2) Press the button again, the VCR will now search in super high speed. (This function will not operate for a NTSC tape.)
- 3) Press **PLAY/▲** to return to normal playback.

#### Still Picture

Press **PAUSE/STILL II** during playback to view a still picture on the TV screen.

- If you press **PAUSE/STILL II** to freeze the picture, usually there will be noiselines on the TV screen. This is normal, however, each time you press **PAUSE/STILL II** the lines will change position. (Only 31B-250/31B-254)
- When the picture begins to vibrate vertically, stabilize the picture by pressing **CHANNEL (▲/▼)** in the Still mode.
- After the VCR has been in Still mode for 5 minutes, it will stop automatically to protect the tape and the video head.

<Note for "Speed search" and "Still Picture">

- Usually there will be video "noise" lines (black and white streaks or dots) on the screen. This is normal. The still picture will, in addition to containing the "noise" lines, be black and white. This is not a fault of the machine but merely a by-product of the technology involved in producing a VCR with LP mode.

#### Slow Motion (31B-450 and 31B-454 only)

- Press **SLOW** to reduce the playback speed. The VCR mutes the sound during slow motion. You can control the speed by pressing **F.FWD/►** (faster) or **REW/◀** (slower). Press **PLAY/▲** to return to normal playback.
- If it is left in the Slow mode for more than 5 minutes, the VCR will automatically switch to the Stop mode.

### Recording

#### Viewing and Recording the Same Programme

- 1) Insert a cassette tape with its erase-prevention tab in place. (If necessary, rewind or fast forward the tape to the point at which you want to begin recording.)
- 2) Press the **number buttons** or **CHANNEL (▲/▼)** to select the channel to be recorded.
- 3) Press **SPEED/SYSTEM** to select the tape speed (SP/LP).
- 4) Press **REC/OTR** to begin recording.
  - The REC indicator on the VCR comes on.
- 5) Press **STOP/▼** when recording is completed.

#### Skipping Unwanted Programme Material During Recording

- 1) Press **PAUSE/STILL II** when you want to temporarily halt recording. You can check the remaining pause time with **■** marks on the TV screen. Each **■** mark represents 1 minute. After 5 minutes, the VCR will automatically switch to the Stop mode to prevent tape damage.
- 2) Press **PAUSE/STILL II** or **REC/OTR** to resume recording.

#### Recording One Programme While Viewing Another

You can record one programme while viewing another. To start recording, follow steps 1) to 4) under "Viewing and Recording the Same Programme". Then, set the TV to the channel you want to watch.

#### To Monitor the Progress of Your Recording

Select the video channel on the TV.

#### Assemble Function

- You can record in continuation from previous programme on a pre-recorded tape.

- 1) Insert a pre-recorded tape. Press **PLAY/▲** to start playback.
- 2) Press **PAUSE/STILL II** at the desired point on the tape.
- 3) Press **REC/OTR**. The VCR will be in the Recording Pause mode.
- 4) Press **CHANNEL (▲/▼)** to select the channel to be recorded.
- 5) Press **REC/OTR** or **PAUSE/STILL II**. The recording will begin.
- 6) Press **STOP/▼** when recording is completed.

## Advanced Operations

### Counter Memory

This feature can be used to memorize a beginning point that you want to watch again. Rewinding or fast forwarding makes it easy to locate this point.

**Note:**

- If a tape includes both programmes recorded in the PAL system and ones recorded with NTSC system, this function may not be operated correctly.
- TAPE COUNTER MEMORY does not function if the Auto Repeat mode is set to ON. In this case, set the Auto Repeat mode to OFF.

- 1) Stop the tape at the desired point.
- 2) Press **TAPE COUNTER RESET** to display 0:00:00.
- 3) Press **TAPE COUNTER MEMORY** so that "M" appears on the TV screen.
- 4) Press **REC/OTR** or **PLAY/▲**.
  - Press **STOP/▼** when recording or playback is completed.
- 5) Press **REW/◀** or **F.FWD/►**. The VCR will automatically stop when the counter returns to 0:00:00 (approx.)

### To Exit the Counter Memory

Press **TAPE COUNTER MEMORY** so that the "M" disappears from the TV screen.

**Note:** When you set the Auto Repeat mode to ON while the Counter Memory mode is ON, the VCR exits the Counter Memory mode automatically.

### OTR (One Touch Recording)

This function enables you to set the duration of a recording simply by pressing **REC/OTR**.

- 1) Follow steps 1) to 3) in "Viewing and Recording the Same Programme" section.
- 2) Press **REC/OTR** repeatedly until the desired recording length appears in the upper left corner of the TV screen.

● → ● [0:30] → ● [1:00]... → ● [7:30] → ● [8:00]  
(Normal recording) (OTR: 30 minutes)

Recording stops when 0:00 is reached.

- To check time remaining during an OTR  
Press **DISPLAY**.
- To change the recording length during an OTR  
Press **REC/OTR** repeatedly until the desired length appears.
- To stop an OTR before recording is finished  
Press **STOP/▼**.
- To cancel the OTR but continue recording  
Press **REC/OTR** repeatedly until "●" appears without the recording length.

### Auto Repeat Playback

The VCR has an auto repeat function that allows you to repeat a tape indefinitely without touching **PLAY/▲**.

- Use the remote control for this procedure.
- Insert a pre-recorded tape.

- 1) Press **MENU**.
- 2) Press **PLAY/▲** or **STOP/▼** to select "SET UP", then press **F.FWD/►**.
- 3) Press **PLAY/▲** or **STOP/▼** to select "AUTO REPEAT".
- 4) Press **F.FWD/►** so that "ON" appears next to "AUTO REPEAT" on the TV screen.  
When in Stop mode, Auto Repeat mode will start automatically.  
If the on-screen menu still remains, press **MENU** to exit, then press **PLAY/▲**.

**Note:**

- Once you select the Auto Repeat mode, it stays in effect even after you turn off the VCR.
- TAPE COUNTER MEMORY does not function if the Auto Repeat mode is set to ON.
- When you set the Auto Repeat mode to ON while the Counter Memory mode is ON, the VCR exits the Counter Memory mode automatically.

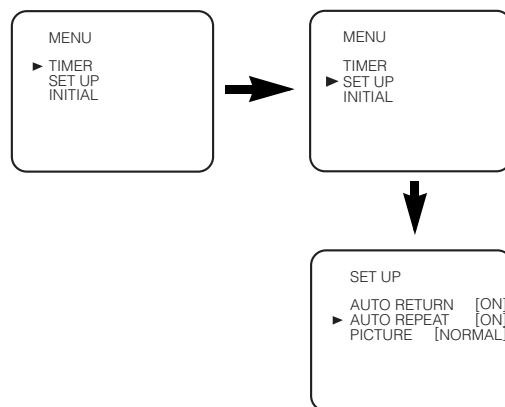
### To Stop Playback

Press **STOP/▼**.

### To Exit the Auto Repeat Mode

Repeat steps 1) to 3). Then, press **F.FWD/►**.

"OFF" will appear next to "AUTO REPEAT" on the TV screen. Press **MENU** to exit.



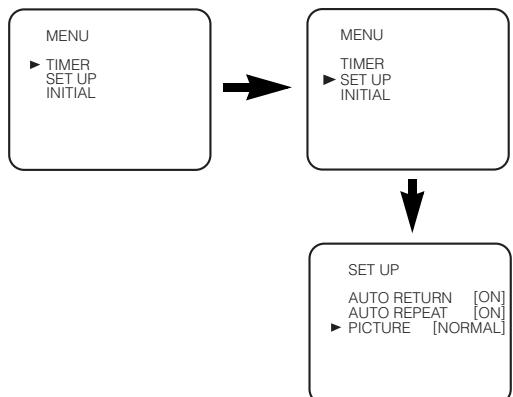
## Picture Select

This function enables you to select the picture quality of a tape.

- Use the remote control for this procedure.

- 1) Press **MENU**.
- 2) Press **PLAY/▲** or **STOP/▼** to select “SET UP”, then press **F.FWD/►**.
- 3) Press **PLAY/▲** or **STOP/▼** to select “PICTURE”.
- 4) Press **F.FWD/►** until the desired mode (NORMAL, SOFT, or SHARP) is indicated on the TV screen.
- 5) Press **MENU** to exit.

**Note:** Once you select the Picture Select mode, it stays in effect even after you turn off the VCR.



## Automatic Operations

### Automatic Rewind, Eject, Off

When the end of a tape is reached during recording, playback, or fast-forward, the tape will automatically rewind to the beginning. After that, the VCR will eject the tape and turn itself to off.

- The tape will not auto-rewind during Timer Recording or One Touch Recording.
- When the Counter Memory is activated, the tape will rewind to the M0:00:00 position and the VCR will enter the Stop mode.

### Tape Eject

A tape can be ejected with the VCR power on or off (but the VCR must be plugged in).

- If a Timer Recording is set, a tape can only be ejected with the power on.

### Real Time Tape Counter

- This shows the elapsed recording or playback time in hours, minutes, and seconds (Nothing is shown in the case of blank portion).
- The “-” indication will appear when the tape is rewound further than the tape counter position “0:00:00”.

### Timer Recording

You may programme the VCR to start and end a recording while you are away. You can set 8 programmes to record on specific days, daily or weekly within a 1-year period.

- Use the remote control for this procedure.

- Insert a cassette tape with its erase prevention tab in place. (If necessary, rewind or fast forward the tape to the point at which you want to begin recording.)

- 1) Press **MENU**.
- 2) Press **PLAY/▲** or **STOP/▼** to select “TIMER”, then press **F.FWD/►**.

**Note:** If you have not set the clock yet, “CLOCK” setting menu appears. If so, follow the steps outlined in the “Setting the Clock” section. Then, set the timer.

- When you press **F.FWD/►** after pressing **PLAY/▲** or **STOP/▼** during steps 3) to 9), the input mode will move to the next step.
- If you do not press **F.FWD/►** within 5 seconds of setting an item, the input mode will move to the next step.
- Press **REW/◀** to go back one step from the current setting during steps 4) to 10). If **REW/◀** is pressed when the TIMER NUMBER is flashing, the entire programme contents will be erased.

- 3) Programme number flashes. Press **PLAY/▲** or **STOP/▼** repeatedly until the desired programme number appears. Then, press **F.FWD/►**.

- 4) For once-only recording : Press **PLAY/▲** or **STOP/▼** repeatedly until the relevant month appears.

**For daily recording :** To record a TV programme at the same time on the same channel from Monday through Friday. While the month digit is flashing, press **PLAY/▲** or **STOP/▼** repeatedly to select “MO-FR”.

**For everyday recording :** To record a TV programme at the same time on the same channel everyday. While the month digit is flashing, press **PLAY/▲** or **STOP/▼** repeatedly to select “MO-SU”.

**For weekly recording :** To record a TV programme at the same time on the same channel every week. While the month digit is flashing, press **PLAY/▲** or **STOP/▼** repeatedly to select “W-MO” (Example: every monday).

- 5) For once-only recording only : Press **PLAY/▲** or **STOP/▼** repeatedly until your desired day appears.

- 6) Press **PLAY/▲** or **STOP/▼** repeatedly until the relevant start hour appears. Next, enter the minute digit.

- 7) Press **PLAY/▲** or **STOP/▼** repeatedly until the relevant end hour appears. Next, enter the minute digit.

- 8) Press **PLAY/▲** or **STOP/▼** repeatedly until the relevant channel number appears.

- 9) Press **PLAY/▲** or **STOP/▼** repeatedly until the desired tape speed appears.

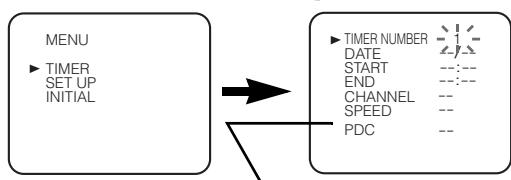
- 10) (31B-254 and 31B-454 only)  
Press **PLAY/▲** or **STOP/▼** repeatedly to set PDC “ON” or “OFF”.

- 11) Press **F.FWD/►**. Programme is now completed.  
• To set another timer programme, repeat steps 3) to 11).

- 12) Press **MENU** to exit.

- 13) Press **FUNCTION** to activate the timer.

The TIMER indicator on the front panel comes on.



For models 31B-254/31B-454

### To Stop a Timer Programme Which Has Already Started

Press **STOP/EJECT** on the VCR.

**Note:** **STOP/▼** on the remote control will not function in the Timer Recording mode.

### To Correct Timer Programmes

If you want to correct an automatic timer after you finished setting programme,

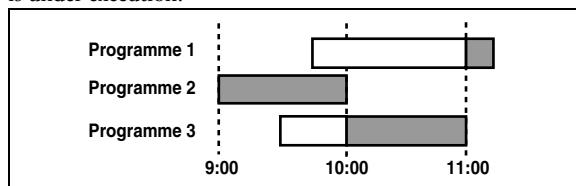
- 1) Repeat steps **1) to 3)** in the "Timer Recording" section.
- 2) Select the setting you want to change using **F.FWD/►** or **REW/◀**.
- 3) Enter the correct numbers using **PLAY/▲** or **STOP/▼**, then press **F.FWD/►**.
- 4) Press **MENU** to exit.
- 5) Press **FUNCTION** to return to timer standby mode.

### To Cancel or Check the Start/End Time

- 1) Repeat steps **1) to 2)** in the "Timer Recording".
- 2) Select a programme number you want to check using **PLAY/▲** or **STOP/▼**. The details of selected programme appears on the TV screen. You may cancel the entire programme by pressing **REW/◀**.
- 3) Press **MENU** to exit.

### Avoid Overlap of TIMER Programmes...

A timer programme does not work while another programme is under execution.



### Hint for Timer Recording

- If there is a power failure or if the VCR is unplugged for more than 30 seconds, the clock setting and all timer settings will be lost.
- If the tape runs out before the end time, the VCR will switch to the Stop mode immediately, eject the tape and the VCR power will be turned off. The TIMER indicator will flash.
- If a tape is not in the VCR, Timer Recording cannot be performed and the TIMER indicator flashes. If an erase-prevention tab of the tape is missing, the tape will be ejected and the TIMER indicator will flash. Please insert a recordable tape.
- When all the Timer Recordings are completed, the TIMER indicator also flashes. To play or eject the recorded tape, press **FUNCTION first**, and then press **PLAY/▲** or **EJECT ▲**. To rewind the tape to the beginning of the recorded programmes, press **AUTO RETURN** on the VCR.
- The TV that is connected to your VCR may be turned on or off when the VCR is in the Timer Recording mode.
- The VCR will only perform a Timer Recording after it has been placed into timer standby mode.

### Auto Return

#### Using the AUTO RETURN Button

When all the Timer Recordings are completed (TIMER indicator flashes), press **AUTO RETURN** on the VCR **first**. The VCR will rewind to the beginning of the recorded programme(s).

**Note:** If there are any remaining programmes, press **FUNCTION** to turn on the VCR and then press **AUTO RETURN**. In this case, if you press any other button once and then press **AUTO RETURN**, **AUTO RETURN** will not be carried out.

### Using the VCR Menu

If there are any remaining programmes including Daily, Everyday, & Weekly, **AUTO RETURN** will not operate.

- 1) Press **MENU**.
- 2) Press **PLAY/▲** or **STOP/▼** repeatedly to point to "SET UP", then press **F.FWD/►**.
- 3) Press **PLAY/▲** or **STOP/▼** to point to "AUTO RETURN", then press **F.FWD/►**. [ON] will appear next to "AUTO RETURN".
- 4) Press **MENU**.

### Watch the Recorded Timer Programme

Press **FUNCTION** to turn on the VCR, then press **PLAY/▲**.

### Parental Lock

Parental Lock prevents use of the VCR by making the VCR feature buttons on the VCR and the remote control inoperative.

- The **FUNCTION** indicator on the VCR comes on.
- 1) Press and hold down **FUNCTION** on the remote control for 5 seconds until the **TIMER**, **REC** and **TAPE IN** indicators begin flash. The Parental Lock is activated. When you want to cancel it, press and hold **FUNCTION** on the remote control again for 5 seconds.

#### When Parental Lock is activated:

- You may insert a tape. However, the VCR power will remain off.
- You may press **EJECT ▲** to remove the tape (unless a Timer Recording is programmed or has finished).
- Timer Recording will take place as scheduled, even if Parental Lock is activated. "P.L." will appear steadily on the TV screen during the Timer Recording.

### PDC (Programme Delivery Control)

#### Operation for 31B-254/31B-454 only

The Programme Delivery Control (PDC) is a very convenient system which assures that the TV programmes you have programmed for Timer Recording, will be recorded exactly from beginning to end, even if the actual broadcasting time differs from the scheduled time due to delayed start or extension of the programme duration. Also, if a programme is interrupted and, for example, some special news is broadcast, the recording will also be interrupted automatically and resumed when the programme continues.

When the PDC signal drop out because the broadcast signal is weak, or when a broadcasting station does not transmit a regular PDC signal, the Timer Recording will be performed in the normal mode (without PDC) even if it was programmed for PDC. When the starting time of the PDC Timer Recording is from 0:00 to 3:59 on a given day, the PDC function operates from 20:00 on the previous day to 4:00 on the following day. When the starting time of the PDC Timer Recording is from 4:00 to 23:59 on the given day, the PDC function operates from 0:00 on the day to 4:00 on the following day. This means that if the relevant programme is broadcasted within this period, it will be recorded correctly. If

the timer is not programmed correctly, the incorrect timer setting stays in effect unless you cancel it. To cancel the incorrect timer setting, refer to "To Cancel or Check the Start/End Time".

#### QUICK-FIND

##### Operation for 31B-450/31B-454 only

This function enables you to search and confirm the contents of the recorded programme(s) using the index mark.

- Use the remote control for this procedure.
- The tape must be fully rewound.

**1)** Press **QUICK-FIND**.

#### To Skip to the Beginning of Next Programme

**1)** Press **QUICK-FIND**.

#### To View at Normal Speed

**1)** Press **PLAY/▲**. The Quick-Find is cancelled.

**Note:** • This function will not operate in the Recording mode.

- When you want to cancel the Quick-Find while in progress, press **STOP/▼**.
- When the end of a tape is reached during the Quick-Find, the tape will automatically rewind to the beginning. After rewinding finishes, the VCR will eject the tape and turn itself off.

#### INDEX SEARCH

##### Operation for 31B-450/31B-454 only

- The index mark will be made automatically when **REC/OTR** is pressed. It will also be marked at the starting point of Timer Recording and OTR.
- The index mark is not recorded if **PAUSE/STILL II** is pressed and released during recording.
- The time gap between index marks on the tape should be greater than 1 minute for SP recording and 2 minutes for LP recording.
- Use the remote control for this procedure.

**1)** Press **SEARCH MODE**.

**2)** Press **PLAY/▲** or **STOP/▼** repeatedly until the number of programmes that you want to skip appears.

**3)** Press **REW/◀** or **F.FWD/▶**.

The VCR begins rewinding or fast forwarding to the beginning of desired programme.

When the preset programme is reached, the VCR will start playback automatically.

**Note:** • Index Search can be set up to 20.

- This function will not operate in the Recording mode.
- Operations must be followed up within 30 seconds from steps **2** to **3**, otherwise the Index Search mode will be cancelled.
- To exit the Index Search mode, press **MENU** in step **2** or press **STOP/▼** after step **3**.

#### TIME SEARCH

##### Operation for 31B-450/31B-454 only

If a tape includes both programmes recorded in the PAL system and ones recorded in the NTSC system, this function may not be operated correctly.

- Use the remote control for this procedure.

**1)** Press **SEARCH MODE** twice.

**2)** Press **PLAY/▲** or **STOP/▼** repeatedly until the desired time appears.

**3)** Press **REW/◀** or **F.FWD/▶**.

The VCR begins rewinding or fast forwarding to the specified point.

When 0:00 is reached, the VCR will start playback automatically.

**Note:** • Time Search can be set up to 9 hours 59 minutes (9:59).

- This function will not operate in the Recording mode.
- Operations must be followed up within 30 seconds from steps **2** to **3**, otherwise the Time Search mode will be cancelled.
- To exit the Time Search mode, press **MENU** in step **2** or press **STOP/▼** after step **3**.

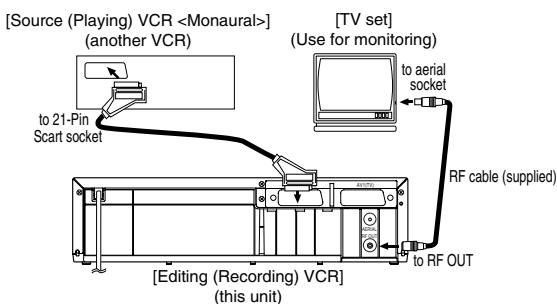
#### Copying a Video Tape

You can make copies of videotapes made by friends or relatives for your own enjoyment.

#### WARNING:

- **Unauthorized recordings of copyrighted video tapes may be an infringement of copyright laws.**

Connect the recording VCR (this unit), playing VCR (another VCR) and your TV as outline in the following diagram.



- 1) Insert a pre-recorded videocassette into the playing VCR.
- 2) Insert a blank videocassette, or one you want to record over, into the cassette compartment of the recording VCR.
- 3) Press **SPEED/SYSTEM** on the remote control to select the desired recording speed (SP/LP).
- 4) Select "AV2" position on the recording VCR. See "Other Connections".
- 5) Press **REC/OTR** on the recording VCR.
- 6) Begin playback of the tape in the playing VCR.
- 7) To stop recording, press **STOP/EJECT** on the recording VCR, then stop playback of the tape in the playing VCR.

**Note:** • For best results during dubbing, use the VCR's front panel controls whenever possible. The remote control might affect the playback VCR's operation.

- If video or colour fades in and out, you may be copying a copy guarded video tape.

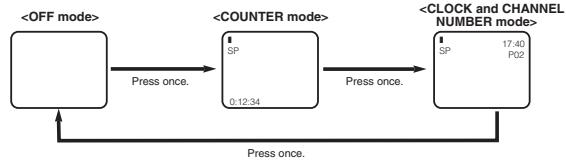
#### To Monitor the Recording

Turn on the TV and select the video channel on the TV.

## A Status Display

To check the Counter, or Clock & Channel number, press **DISPLAY**. Each time you press **DISPLAY**, TV screen will change as illustrated:

When you select the channel using the **number buttons**, select the desired channel (position number).



**Note:** If the on screen display or indicators on the front panel show an abnormal reading or no reading, unplug the VCR for 2 minutes, then replug it again. Please note that clock, and timer settings will be cleared after disconnection.

## Maintenance

### Cabinet Cleaning

- Wipe the front panel and other exterior surfaces of the VCR with a soft cloth that has been immersed in lukewarm water and wrung dry.
- Never use a solvent or alcohol. Do not spray insecticide liquid near the VCR. Such chemicals may cause damage and discolouration to the exposed surfaces.

### Auto Head Cleaning

- This feature automatically cleans the heads as you insert or remove a cassette to ensure a clear picture.
- The playback picture may become blurred or interrupted even if the TV programme received is clear. This does not mean that the recorded programme has been erased. This problem is caused by dirt accumulated on the head after long periods of use, or usage of rental or old tapes. In this case, head cleaning requires highly technical expertise and the nearest dealer should therefore be consulted. Clean heads only when problems occur.

### Service

Should your VCR become inoperative, do not try to correct the problem by yourself. There are no user-serviceable parts inside. Turn the unit off, unplug the power cord, and take the unit to a Service Centre for servicing.



## Troubleshooting Guide

If you have followed the instructions contained in this manual and have difficulty in operating your VCR, locate the SYMPTOM in the left column below. Check the corresponding cell CORRECTIVE ACTION columns to remedy the problem.

SYMPTOM	CORRECTIVE ACTION
No power.	<ul style="list-style-type: none"> <li>• Make sure the power cord is connected to an AC outlet.</li> <li>• Make sure the power is turned on.</li> </ul>
Timer Recording is not possible.	<ul style="list-style-type: none"> <li>• Make sure the Timer Recording is set correctly.</li> <li>• Make sure the power is off.</li> <li>• Make sure the VCR clock is set correctly.</li> </ul>
Recording mode cannot be engaged.	<ul style="list-style-type: none"> <li>• Make sure the erase-prevention tab on the tape is intact. If removed, cover the hole after the tab with adhesive tape.</li> </ul>
No picture or poor picture on playback.	<ul style="list-style-type: none"> <li>• Set your TV to the video channel.</li> <li>• Fine tune your TV.</li> </ul>
No picture but the audio is OK in playback.	<ul style="list-style-type: none"> <li>• Head cleaning is necessary, consult the nearest Authorized Service Centre.</li> </ul>
Playback picture is partially noisy.	<ul style="list-style-type: none"> <li>• Adjust tracking control for a better picture by using CHANNEL (▲/▼).</li> </ul>
On-the-air TV programmes cannot be seen.	<ul style="list-style-type: none"> <li>• Re-check the AERIAL and RF OUT connections.</li> <li>• Set your TV to the TV channel correctly.</li> </ul>
No operation by infrared Remote Control.	<ul style="list-style-type: none"> <li>• Check the batteries in the remote control.</li> </ul>
Video or colour fades in and out when making a copy of a video tape.	<ul style="list-style-type: none"> <li>• You cannot copy a copyrighted video tape. You are experiencing copy guard protection.</li> </ul>

### Make your contribution to the environment!!!



- Spent batteries do not belong in the dustbin.
- You can dispose of them at a collection point for spent batteries or special waste.

Contact your council for details.

## Specifications

### General Specifications

Television system	PAL I TV standard								
Video heads	<table border="1"> <tr> <td>31B-250</td> <td>Rotary two-head helical scan system</td> </tr> <tr> <td>31B-254</td> <td></td> </tr> <tr> <td>31B-450</td> <td>Rotary four-head double azimuth video system</td> </tr> <tr> <td>31B-454</td> <td></td> </tr> </table>	31B-250	Rotary two-head helical scan system	31B-254		31B-450	Rotary four-head double azimuth video system	31B-454	
31B-250	Rotary two-head helical scan system								
31B-254									
31B-450	Rotary four-head double azimuth video system								
31B-454									
Tape width	12.65mm								
Tape speed	SP :23.39mm/sec. LP :11.70mm/sec.								
Tuner channel	IRA-IRJ E21-E69 CATV								

**Note:** This VCR complies with HYPER and OSCAR frequency bands of the CATV.

RF converter	Built-in UHF converter						
Converter output	UHF Channel 22 to 69 (adjustable)						
Timer indication	24-hour system						
Operating temperature	5°C ~ 40°C						
Terminals	<table border="1"> <tr> <td>AERIAL</td> <td>Coaxial type, female</td> </tr> <tr> <td>RF OUT</td> <td>Coaxial type, male</td> </tr> <tr> <td>AUDIO/VIDEO</td> <td>21 pin scart socket x 2</td> </tr> </table>	AERIAL	Coaxial type, female	RF OUT	Coaxial type, male	AUDIO/VIDEO	21 pin scart socket x 2
AERIAL	Coaxial type, female						
RF OUT	Coaxial type, male						
AUDIO/VIDEO	21 pin scart socket x 2						

### Electrical Specifications

Video output level	1Vp-p
Video output impedance	75Ω unbalanced
Audio output level	-6dBv
Video input level	0.5 ~2.0Vp-p
Audio input level	-10dBv
Video S/N ratio (STANDARD)	45dB
Audio S/N ratio (STANDARD)	41dB

### Other Specifications

Power requirement	220-240V ~ 50Hz
Power consumption	25 Watts
Dimensions	W 360mm H 92mm D 226mm
Weight	2.5 Kg (approx.)

**Note:** Designs and specifications are subject to change without notice.

## **Declaration of Conformity**

EMC-Directive: 89 / 336 / EEC

Low Voltage Directive: 73 / 23 / EEC

CE Marking: 93 / 68 / EEC

We: FUNAI EUROPE GMBH

Gasstrasse 18

22761 Hamburg, Germany



declare that the Video Cassette Recorder

31B-250, 31B-254

31B-450 and 31B-454

are in compliance with following norms:

EN 55013: 2001 + A1: 2003

EN 55020: 2002 + A1: 2003

EN 61000-3-2: 2000

EN 61000-3-3: 1995 + A1: 2001

EN 60065: 2002

**Questions and Help on this products, please call**

**Help Line: 0870 383 3010 in the UK.**